IN THE CLAIMS:

Please amend claims as follows.

1. (original) Gasket for sensors to measure gas concentrations, characterized by a mixture of silicone polymers, which are permeable for gas molecules.

2. (original) Procedure to produce a gasket within a glass micropipette, preferably within the tip of a glass micropipette, particularly of a silicone gasket for microsensors to measure gas concentrations, characterized by the following steps:
   1. Aspiration of a non-cross-linking silicone oil into a glass micropipette filled with a liquid, preferably water.
   2. The pressing out of the excess non-cross-linking silicone oil.
   3. Immersion of the tip of the glass micropipette into a drop of cross-linking silicone oil.
   4. Leave the tip of the glass micropipette in the cross-linking silicone oil for at least 5 seconds.
   5. Removal of the glass micropipette from the cross-linking silicone oil.
   6. Repetition of steps 4 to 6 until the desired degree of cross-linking is achieved.
   7. Curing of the silicone gasket.

3. (original) Procedure to produce a gasket for microsensors, preferably a silicone gasket for microsensors to measure gas concentrations, according to claim 2, characterized by the fact that the glass micropipette is made of either borosilicate, aluminum silicate or quartz glass.

4. (currently amended) Procedure to produce a gasket for microsensors, preferably a silicone gasket for microsensors to measure gas concentrations, according to claim 2 ~~claims 2 and 3~~, characterized by an inner diameter of less than or equal to 12 μm, preferably between 0.5 μm and 2 μm, particularly preferred between 1.75 and 2 μm.

5. (currently amended) Procedure to produce a gasket for microsensors, preferably a silicone gasket for microsensors to measure gas concentrations, according to claim 2 ~~one of the claims 2 to 4~~, characterized by a gasket length of less or equal to 50 μm, preferably between 5 μm and 20 μm, particularly preferred between 8 μm and 12 μm.

6. (currently amended) Procedure to produce a gasket for microsensors, preferably a silicone gasket for microsensors to measure gas concentrations, according to claim 2 ~~one of the claims 2 to 5~~, characterized by the utilization of silicone, which possesses electrical insulating characteristics.

7. (currently amended) Procedure to produce a gasket for microsensors, preferably a silicone gasket for microsensors to measure gas concentrations, according to claim 2 ~~one of the claims 2 to 6~~, characterized by an inner diameter of the tip of the glass micropipette of less or equal to 4 µm.

8. (original) Procedure to produce a gasket for microsensors, preferably a silicone gasket for microsensors to measure gas concentrations, according to claim 7, characterized by filling the glass micropipette with water prior to the aspiration of the non-cross-linking silicone oil, whereby surface active substances, preferably non-ionic tensides, had been added to the water in such a way that, in case surface active substances had been added, the pressing out of excess non-cross-linking silicone oil according to procedure steps 2 and 3 of claim 2 can be omitted.

9. (currently amended) Procedure to produce a gasket for microsensors, preferably a silicone gasket for microsensors to measure gas concentrations, according to claim 2 ~~one of the claims 2 to 8~~, characterized by silanizing of the glass micropipette prior to the production of the gasket.

10. (currently amended) Procedure to produce a gasket for microsensors, preferably a silicone gasket for microsensors to measure gas concentrations, according to claim 2 ~~one of the claims 2 to 9~~, characterized by the utilization of a non-cross-linking silicone oil with terminal trimethyl-siloxy groups, preferably a non-cross-linking polydimethylsiloxane with terminal trimethyl-siloxy groups, particularly preferred is a non-cross-linking polydimethylsiloxane with terminal trimethyl-siloxy groups with a viscosity between 0.02 and 0.5 stokes, even more particularly preferred is a non-cross-linking polydimethylsiloxane with terminal trimethyl-siloxy groups with a viscosity between 0.05 and 0.1 stokes.

11. (currently amended) Procedure to produce a gasket for microsensors, preferably a silicone gasket for microsensors to measure gas concentrations, according to claim 2 ~~one of the claims 2 to 10~~, characterized by the utilization of a cross-linking silicone

made from a mixture of, on one hand, dimethylsiloxane with terminal hydroxyl groups and trimethyl-siloxy and , on the other, a cross-linker, preferably of a cross-linking RTV silicone oil mixture, of , on one hand, dimethylsiloxane with terminal hydroxyl groups and trimethyl-siloxy and , on the other, a cross-linker, particularly preferred is a cross-linking RTV silicone oil mixture of , on one hand, dimethylsiloxane with terminal hydroxyl groups and trimethyl-siloxy as well as 5-10% methyltrimethoxysiloxane as cross linker, even more particularly preferred is a cross-linking RTV silicone oil mixture, of , on one hand, dimethylsiloxane with terminal hydroxyl groups and trimethyl-siloxy as well as 5-10% methyltrimethoxysiloxane as cross linker, whereby the cross-linking RTV silicone oil mixture of dimethylsiloxane with terminal hydroxyl groups and trimethyl-siloxy as well as 5-10% methyltrimethoxysiloxane as cross linker possess a viscosity of less than or equal to 28,000 cSt.

12. (currently amended) Procedure to produce a gasket for microsensors, preferably a silicone gasket for microsensors to measure gas concentrations, according to claim 2 ~~one of the claims 2 to 11~~, characterized by curing the silicone gasket for 2 to 6 hours at room temperature, preferably for 3 to 5 hours at room temperature, particularly preferred for 4 hours at room temperature.

13. (currently amended) Procedure to produce a gasket for microsensors, preferably of a silicone gasket for microsensors to measure gas concentrations, according to claim 2 ~~one of the claims 2 to 12~~, characterized by curing the silicone gasket in humid warmth of 40-80°C, preferably for 0.5-4 hours at 50-70°C, particularly preferred for 45-75 minutes at 55-65°C.

14. (currently amended) Procedure to produce a microsensor to measure gas concentrations, whereby a gasket characterized by a mixture of silicone polymers, which are permeable for gas molecules ~~according to claim 1~~ is employed, characterized by the following steps:
    1. Production of the gasket according to claim 2 ~~one of the claims 2 to 13~~, whereby the glass micropipette is, after removal from the cross-linking silicone oil ~~according to procedure step 5 of claim 2~~, in the case of achieving the desired degree of cross-linking ~~according to procedure step 6 of claim 2~~, first of all, doped with an enzyme solution and the gasket is afterwards cured according to ~~procedure step 7 of claim 2~~.

2. Filling of a second glass micropipette with a solution of a proton sensitive cocktail and a liquid polymer, whereby the filling is realized from the opposite side to the tip of the glass micropipette.
3. Hardening of the mixture of proton sensitive cocktail and polymer, in such a way that the tip of the pipette seals/closes itself
4. Coating of the hardened mixture with proton sensitive cocktail and a reference buffer
5. Insertion of a working electrode into the second glass micropipette
6. Insertion of a reference electrode into the first glass micropipette
7. Insertion of the tip of the second glass micropipette into the first glass micropipette, maintaining a distance between the tip of the second glass micropipette and the silicone gasket
8. Fixing both glass micropipettes to one another with an adhesive.

15. (currently amended) Procedure to produce a microsensor to measure gas concentrations according to claim 14, ~~whereby a gasket according to claim 1 is utilized~~, characterized by abstaining from the installation of a working electrode ~~according to procedure step 5 of claim 14~~ and connecting instead the rear end of the second glass micropipette, after fixing together both glass micropipettes ~~according to procedure step 8 of claim 14~~, with a conventional electrode holder, whereby the electrode holder contains an electrode made of metal and a salt thereof.

16. (original) Procedure to produce a microsensor to measure gas concentrations according to claim 15, whereby a gasket according to claim 1 is utilized, characterized by an electrode made from a silver-silver chloride die framed in plastic.

17. (currently amended) Procedure to produce a microsensor to measure gas concentrations according to claim 14 ~~claims 14 to 16~~, characterized by the utilization of the enzyme carboanhydrase.

18. (original) Procedure to produce a microsensor to measure gas concentrations according to claim 17, characterized by adding an antioxidant to the enzyme, preferably an antioxidant from the group ascorbinic acid, glutathione, catechines, benzoic acid, and rosmarinic acid. Ascorbinic acid is particularly preferred.

19. (currently amended) Procedure to produce a microsensor to measure gas concentrations according to claim 14 ~~claims 14 to 18~~, characterized by the utilization of non-toxic electrodes, preferably of silver-silver chloride electrodes.

20. (currently amended) Utilization of a gasket within a microsensor according to claim 14 ~~one of the claims 14 to 19~~, characterized by the employment of the microsensor to measure gases out of the group carbon dioxide, ammoniac and oxygen, preferably to measure carbon dioxide.

21. (currently amended) In a method of employing a microsensor for biological system analysis, the improvement comprising the use [[Utilization]] of a gasket within a microsensor according to claim 14 ~~one of the claims 14 to 20, characterized by the employment of the microsensor for biological system analysis~~.

22. (original) Utilization of a gasket within a microsensor according to claim 21, characterized by the employment of the microsensor for the analysis of gases in phytophysiological systems, preferably for the measurement of the cell respiration, particularly preferred for the measurement of carbon dioxide and / or NH_3 in plant leaves, even more particularly preferred for high resolution measurements of carbon dioxide and / or NH_3 in the single stomata of plant leaves.

23. (new) Procedure to produce a microsensor to measure gas concentrations according to claim 15, characterized by the utilization of the enzyme carboanhydrase.

24. (new) Procedure to produce a microsensor to measure gas concentrations according to claim 23, characterized by adding an antioxidant to the enzyme, preferably an antioxidant from the group ascorbinic acid, glutathione, catechines, benzoic acid, and rosmarinic acid. Ascorbinic acid is particularly preferred.

25. (new) Procedure to produce a microsensor to measure gas concentrations according to claim 15, characterized by the utilization of non-toxic electrodes, preferably of silver-silver chloride electrodes.

26. (new) Utilization of a gasket within a microsensor according to claim 15, characterized by the employment of the microsensor to measure gases out of the group carbon dioxide, ammoniac and oxygen, preferably to measure carbon dioxide.

27. (new) In a method of employing a microsensor for biological system analysis, the improvement comprising the use of a gasket within a microsensor according to claim 15.

28. (new) Utilization of a gasket within a microsensor according to claim 27, characterized by the employment of the microsensor for the analysis of gases in phytophysiological systems, preferably for the measurement of the cell respiration, particularly preferred for the measurement of carbon dioxide and / or NH_3 in plant leaves, even more particularly preferred for high resolution measurements of carbon dioxide and / or NH_3 in the single stomata of plant leaves.